1.0 AMENDMENT

1.1 IN THE CLAIMS:

Claims 16-46 and 49-55 have been withdrawn from consideration as being directed to non-elected inventions.

Claims 47 and 48 were previously canceled without prejudice and without disclaimer.

Claims 1-15 have been amended as shown below:

Please add new claims 56-66 as shown as shown below:

1. (Currently Amended) A method of nuclear transfer, comprising at least the steps of: (a) selecting and segregating G1 cells from a proliferating or non-proliferating population of donor cells; and (b) transferring a nucleus from such a segregated G1 cell into an enucleated recipient cell.

2. (Currently Amended) ~~A method as claimed in~~ The method of claim 1, wherein ~~the donor cell~~ said population of donor cells is at one or more known or unknown stages of the cell cycle.

3. (Currently Amended) ~~A method as claimed in~~ The method of claim 1, wherein said ~~donor cell~~ population of donor cells is non-proliferating and has been ~~synchronised~~synchronized at ~~any~~ a point in the G1 stage of the cell cycle.

4. (Currently Amended) ~~A method as claimed in~~ The method of claim 1, wherein said segregated G1 cell is segregated at an early G1 phase.

5. (Currently Amended) ~~A method as claimed in~~ The method of claim 1, wherein the donor

cell population is non-proliferating and comprises senescent cells.

6. (Currently Amended) ~~A method as claimed in~~ The method of claim 1, wherein said ~~donor cell~~ population of donor cells is derived from either embryo, fetal, juvenile or adult cells isolated from an animal *in vivo* or from a cell culture *in vitro*.

7. (Currently Amended) ~~A method as claimed in~~ The method of claim 6, wherein said ~~donor cell~~ population of donor cells comprises ~~any~~ a diploid karyotypically-normal cell ~~capable of being~~ that can be stimulated to enter the cell cycle and proliferate.

8. (Currently Amended) ~~A method as claimed in~~ The method of claim 7, wherein said ~~donor cell~~ population of donor cells is of an undifferentiated cellular state, or ~~are~~ is at any degree of differentiation, ~~or~~ quiescence, or senescence.

9. (Currently Amended) ~~A method as claimed in~~ The method of claim 1, wherein the donor cells are adult or fetal fibroblasts or follicular cells.

10. (Currently Amended) A method as claimed in claim 1, wherein said population of donor cells comprises a modified cells.

11. (Currently Amended) ~~A method as claimed in~~ The method of claim 10, wherein said population of donor cells comprises a transgenic cells.

12. (Currently Amended) ~~A method as claimed in~~ The method of claim 1, wherein ~~the~~ said enucleated recipient cell comprises an enucleated oocyte.

13. (Currently Amended) ~~A method as claimed in~~ The method of claim 12, wherein ~~the~~ said enucleated oocyte is obtained from a species corresponding in origin to the donor nuclei.

14. (Currently Amended) ~~A method as claimed in~~ The method of claim 1, wherein ~~the~~ said enucleated recipient cell comprises an enucleated stem cell or a clump of enucleated stem cells fused together.

15. (Currently Amended) ~~A method as claimed in~~ The method of claim 14, wherein ~~the~~ said enucleated stem cells or said clump of enucleated stem cells ~~are~~ comprise embryonic stem cells isolated from a growing embryo or ~~form~~ from an established cell line in culture.

16. (Withdrawn) A method of producing cloned animal embryos which comprises transferring a segregated donor nucleus in the G1 stage of the cell cycle into an enucleated recipient cell.

17. (Withdrawn) A method as claimed in claim 16, wherein the donor nuclei are genetically altered to produce cloned embryos having desirable genetic traits.

18. (Withdrawn) A method as claimed in claim 16, when used to produce an animal species

of cloned embryo selected from the group comprising birds, amphibia, fish and mammals.

19. (Withdrawn) A method as claimed in claim 18, wherein said cloned animal embryo is a mammal, selected from the group comprising primates including humans, rodents, rabbits, eats, dogs, horses, cattle, sheep, deer, goats and pigs.

20. (Withdrawn) A reconstituted non-human animal embryo prepared by the method claimed in claim 16.

21. (Withdrawn) A reconstituted non-human animal embryo as claimed in claim 20, comprising a transgenic embryo.

22. (Withdrawn) A reconstituted non-human animal embryo as claimed in claim 20 re-cloned to further increase embryo numbers or which undergoes serial nuclear transfer to aid nuclear reprogramming and/or development.

23. (Withdrawn) A reconstituted non-human animal embryo as claimed in claim 20, comprising a species of mammal selected from the group comprising primates including humans, rodents, rabbits, cats, dogs, horses, cattle, sheep, deer, goats and pigs.

24. (Withdrawn) A method of cloning a non-human animal comprising the steps: (1) producing a cloned non-human animal embryo according to the method of claim 16; (2)

allowing a non-human animal to develop to term from the embryo; and (3) optionally breeding from the non-human animal so formed either by conventional methods or by further cloning.

25. (Withdrawn) A method as claimed in claim 24, wherein said cloned non-human animal is a non-human mammal selected from the group comprising non-human primates, rodents, rabbits, cats, dogs, horses, cattle, sheep, and deer.

26. (Withdrawn) A method as claimed in claim 24, wherein said cloned non-human animal is a transgenic non-human animal having a desirable genetic trait.

27. (Withdrawn) A method as claimed in claim 26, wherein said transgenic non-human animal is a transgenic bovine or ovine.

28. (Withdrawn) A cloned non-human animal prepared by the method of claim 24.

29. (Withdrawn) A cloned non-human animal as claimed in claim 28 comprising a mammal selected from the group comprising non-human primates, rodents, rabbits, cats, dogs, horses, cattle, sheep, and deer.

30. (Withdrawn) A cloned non-human animal as claimed in claim 28 comprising a transgenic non-human animal having a desirable genetic trait.

31. (Withdrawn) A cloned non-human animal as claimed in claim 30 comprising a transgenic bovine or

32. (Withdrawn) A cloned non-human transgenic animal as claimed in claim 30 wherein the desirable genetic trait is selected from the insertion, deletion, or modification of a gene or genes enabling the production of pharmaceutical proteins in milk, blood or urine; production of nutraceutical products in milk or meat; production of beneficial agricultural traits to improve the quality of milk, meat and fibre production; improve resistance to pests and diseases; production of industrial proteins in milk; xenotransplantation; and for the generation of transgenic animals as models for human disease.

33. (Withdrawn) Offspring and descendants of the cloned non-human animal as claimed in claim 28.

34. (Withdrawn) A method of producing an embryonic cell line comprising the steps a) selecting and segregating G1 cells from a proliferating population of donor cells or from a synchronised population of G1 cells or from a population of senescent cells, and transforming a nucleus from such a segregated cell into an enucleated recipient cell; b) growing to blastocyst stage; c) recovering embryonic cells; and d) establishing an immortalised cell line *in vitro*.

35. (Withdrawn) A method as claimed in claim 34, wherein said embryonic cells are embryonic stem cells.

36. (Withdrawn) A method as claimed in claim 34, wherein said donor cells are human cells.

37. (Withdrawn) A method as claimed in claim 34, wherein both donor and recipient cells are human cells.

38. (Withdrawn) A method as claimed in claim 34 wherein the donor cells are adult or fetal cells selected from any karyotypically normal cell type and the recipient cells are selected from any cell type capable of reprogramming gene expression.

39. (Withdrawn) An embryonic cell line produced by the method of claim 34.

40. (Withdrawn) A human embryonic stem cell line produced by the method of claim 35, useful in therapeutic applications.

41. (Withdrawn) A method of producing embryonic stem ceils comprising the steps of a) selecting and segregating G1 cells from a proliferating population of donor cells or from synchronised population of G1 cells or from a population of senescent cells and transferring a nucleus from such a segregated cell into an enucleated recipient cell; b) growing to blastocyst stage; and c) recovering embryonic stem cells.

42. (Withdrawn) A method as claimed in claim 41, wherein said donor cells are human cells.

43. (Withdrawn) A method as claimed in claim 41, wherein both donor and recipient cells are human cells.

44. (Withdrawn) A method as claimed in claim 41, wherein the donor cells are adult or fetal cells selected from any karyotypically normal cell type and the recipient cells are selected from any cell type capable of reprogramming gene expression.

45. (Withdrawn) Embryonic stem cells produced by the method of claim 41.

46. (Withdrawn) Embryonic stem cells as claimed in claim 45, comprising human embryonic stem cells.

47.-48. (Canceled)

49. (Withdrawn) A method of therapeutic cloning, wherein embryonic stem cells are produced according to claim 35 from a donor cell derived from a subject, and cultured to produce specialised cells or tissue for transplantation in said subject or in another subject in need of such treatment.

50. (Withdrawn) A method as claimed in claim 49, wherein said embryonic stem cells comprise one or more transgenes to confer a desirable genetic trait in the resulting differentiated cells used for transplantation.

51. (Withdrawn) A method of treating a disease, disorder or injury which may be treated by transplantation of specialised cells or tissue, comprising administering to a 1;atient in need thereof a therapeutically effective amount of specialised cells or tissue produced according to the method of claim 49.

52. (Withdrawn) A method as claimed in claim 49, wherein said disease, disorder or injury is selected from various neurological disorders *(eg* Parkinson's disease), diabetes, heart disease, muscular dystrophy, various hereditary diseases, specific cancers *(eg* leukemia), spinal cord injury, bums and other afflictions.

53. (Withdrawn) A method of drug discovery or toxicology testing of drugs using *in vitro* differentiated human embryonic stem cells produced by the methods of claim 41.

54. (Withdrawn) A method of xenotransplantation, wherein cells, tissues and organs are isolated from the non-human cloned animal of claim 28, and used for transplantation in a human patient in need thereof.

55. (Withdrawn) A method of gene therapy, wherein ceils, tissues and organs comprise a transgene and are isolated for the non-human cloned animal of claim 30.

Please add the following new claims:

56. (New) The method of claim 1, further comprising the additional step of: (c) growing said

enucleated recipient cell that comprises said transferred nucleus to a blastocyst stage of development.

57. (New) The method of claim 56, further comprising the additional step of: (d) recovering a population of embryonic cells from said blastocyst stage of development.

58. (New) The method of claim 57, further comprising the additional step of: (e) establishing an immortalized cell line from said population of embryonic cells *in vitro*.

59. (New) The method of claim 13, wherein said donor nuclei are genetically-altered to produce a cloned embryo having at least one desirable genetic trait.

60. (New) The method of claim 13, wherein said enucleated oocyte is obtained from a species selected from the group consisting of birds, amphibia, fish and mammals.

61. (New) The method of claim 60, wherein said enucleated oocyte is obtained from a mammal.

62. (New) The method of claim 61, wherein said enucleated oocyte is obtained from a mammal selected from the group consisting of humans, rodents, rabbits, dogs, horses, cattle, sheep, deer, goats and pigs.

63. (New) A method of nuclear transfer, comprising selecting and segregating a population

of G1-phase cells from a population of non-proliferating donor cells, and transferring a nucleus from such a segregated G1-phase cell into an enucleated recipient cell.

64. (New) A method of nuclear transfer, comprising selecting and segregating a population of early-G1-phase cells from a population of early-G1-phase-synchronized non-proliferating donor cells, and transferring a nucleus from such a segregated early-G1-phase cell into an enucleated recipient cell.

65. (New) A method of nuclear transfer, comprising selecting and segregating a population of early-G1-phase cells from a population of early-G1-phase-synchronized non-proliferating embryonic or fetal donor cells, and transferring a nucleus from such a segregated early-G1-phase cell into an enucleated recipient cell.

66. (New) A method of nuclear transfer, comprising selecting and segregating a population of early-G1-phase cells from a population of early-G1-phase-synchronized non-proliferating embryonic or fetal donor fibroblast cells, and transferring a nucleus from such a segregated early-G1-phase fibroblast cell into an enucleated recipient stem cell or oocyte.

2.0 RESPONSE

2.1 CHANGE OF ADDRESS FOR APPLICANTS' UNDERSIGNED REPRESENTATIVE

Applicants note for the record that representation of this matter has been transferred to the undersigned representative who relocated his practice from Williams, Morgan & Amerson (customer number 0023720) to Haynes and Boone, LLP (customer number 0027683) effective March 9, 2005. Authorization for the transfer of this matter to the new firm has been granted and the representative's new firm has submitted under separate cover a revocation of power of attorney, a new power of attorney, and a change of customer number/correspondence address to formalize this change of representative.

The new attorney docket number for this case is 36697.6, and Applicants appreciate the Examiner's so noting of this in subsequent communication with the undersigned representative.

Should the Office or the Examiner-in-Charge of this application have any questions, the Applicants' undersigned representative may be contacted at the following address:

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2.2 STATUS OF THE CLAIMS

Claims 1-46 and 49-55 were pending at the time of the Restriction Requirement.

Claims 16-46 and 49-55 have been withdrawn herein without prejudice and without disclaimer, as being directed to non-elected inventions.

Claims 1-15 have been amended herein.